

### **REMARKS/ARGUMENTS**

The present amendment is in response to the Office Action mailed December 29, 2003, in which Claims 1 through 10 and 12 through 20 were rejected. Applicant has thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the reference cited therein. The following remarks are believed to be fully responsive to the Office Action and, when coupled with the amendments made herein, are believed to render all claims at issue patentably distinguishable over the cited references.

Independent Claims 1 and 14 have been cancelled, leaving amended Claim 13 the only remaining independent claim now pending.

Independent Claim 13 has been amended for clarification to include a limitation which defines the base layer as being composed of a polypropylene homopolymer.

Claims 2 through 5, 8, 9, and 15 have been amended to change their dependencies from cancelled Claims 1 and 14 to independent Claim 13. Claim 9 has been further amended to delete the limitation "a base layer comprising a propylene homopolymer" as being redundant. Finally, Claim 15 has been further amended to define that the base layer comprises a filler layer.

Accordingly, Claims 2 through 5, 8, 9, 12, 13, 15, 16, 17 and 20 are pending.

All the changes are made for clarification and are based on the application and drawings as originally filed. It is respectfully submitted that no new matter is added. Applicant respectfully requests reconsideration in light of the above amendments and the following remarks.

### **REPEATED REJECTIONS**

With respect to Paragraph 5 of the Office Action, the Examiner repeated his rejections of Claims 1 through 8 and 10 as being anticipated by Takagi. Of the rejections Claim 1 is the only independent claim. As Claims 1, 6 and 10 have been cancelled herein and as the dependencies of Claims 2 through 5, 8 and 9 have been changed to amended independent Claim 13, Applicant respectfully submits that this rejection is now moot.

### **NEW REJECTIONS**

#### **A. Claim Rejections - 35 U.S.C. Section 112**

The Examiner rejected Claims 14, 15, 18 and 19 under 35 U.S.C. Section 112 as being indefinite. The Examiner stated that the limitation "intermediate layer" in line 6 rendered the claim indefinite. Applicant respectfully submits that this rejection is now moot in light of the cancellation of independent Claim 14 (as well as dependent Claims 18 and 19).

**B. Claim Rejections - 35 U.S.C. Section 102(b)**

**1. Rejections under Katsura *et al.***

With respect to Paragraph 6 of the Office Action, the Examiner rejected Claims 1, 2, 4, 7, 9 and 13 through 19 as being anticipated by U.S. Patent No. 5,223,315 to Katsura *et al.* (hereinafter referred to as "Katsura *et al.*"). Of the rejected claims the only remaining independent claim is Claim 13, Claim 14 having been cancelled.

Applicant respectfully traverses this rejection.

Of the rejected claims certain claims have been cancelled. Particularly Claims 1, 6, 7, 14, 18 and 19 have been cancelled.

Applicant respectfully submits that the present invention as claimed differs from Katsura *et al.* in relation both to the shrink properties and to the combined materials. It is generally known in the art to apply polypropylene labels to blow molded PP containers. Such labelled containers of the same polymer demonstrate good optical appearance. The inventor of the present invention found through experimentation that polypropylene homopolymer labels did not perform as well when used for labelling a HDPE container via in mold labelling. The object of the instant invention was to improve the appearance of blow molded containers made from HDPE having plastic labels made from polypropylene applied thereon.

With this object in mind consideration of the reference to Katsura *et al.* and its teachings is appropriate. This reference teaches that a certain degree of shrinkage of the label film is helpful to avoid blistering of the applied label. However, Katsura *et al.*

teach that shrinkage has to be higher than the heat shrinkage factor of the polymer of the container and that the film shrinkage was to be at a certain temperature. This temperature was 40 °C lower than the melting point of the container polymer. Clearly such a teaching is quite specific in relation to the shrinkage of the film. Accordingly, it may be understood that the reference to Katsura *et al.* does not recommend generically that plastic labels shall have any shrinkage or generally a high shrinkage. Rather, this reference offers only a specific teaching saying that the shrinkage has to be within certain limits with these limits being dependent on the container material.

Accordingly, if a skilled artisan applies such teaching to the optimally-performing system

polypropylene labels on polypropylene containers the artisan would realize that the teaching of Katsura *et al.* is, in fact, correct: The heat shrinkage factor of polypropylene is given in col. 9, Tab. 1. It is said to be 0.6 to 3.0%. Accordingly the label must have a shrinkage of more than 0.6 to 3.0% at a temperature of  $161^{\circ}\text{C} - 40^{\circ}\text{C} = 121^{\circ}\text{C}$  ( $161^{\circ}\text{C}$  is the melting point of PP). Such a shrinkage of above 0.6 to 3% is a reasonable order for a polypropylene label. A biaxially oriented polypropylene film may easily have such a residual shrinkage due to stretching despite heat setting and even if it was not intended to produce a shrink film. Therefore Katsura *et al.* confirm that polypropylene films can be used for in-mold labelling a blow mold polypropylene container, thus providing the skilled artisan with a rule by which the kind/degree of shrinkage of the polypropylene label is needed for labelling a HDPE container may be calculated. With this knowledge in hand, if the artisan proceeds to the next step and attempts to solve

the problem of fixing a polypropylene label onto an HDPE container, he would naturally apply the teachings of Katsura *et al.* in the following manner.

According to Table 1 in col. 9 HDPE has a heat shrinkage factor of 2 to 5%. According to Table 1 in col. 23 the melting point of HDPE is 132°C (see example 6/9/10). Consequently, the shrinkage for labelling the HDPE container shall be more than 2 to 5% at a temperature of 40°C below the melting point which is:  $132 - 40^{\circ}\text{C} = 92^{\circ}\text{C}$ . Technically, achieving at least more than 2% shrinkage of a biaxially oriented polypropylene film at 92°C is rather incredible. In fact, a biaxially oriented film having a propylene homopolymer base layer has no shrinkage at 92°C, whether low or high. One cannot make a biaxially oriented film of polypropylene which shrinks more than 2% or even more than 5% at 92°C. It is quite clear that these figures are inconsistent, and the only reasonable conclusion is that the teaching of Katsura *et al.* does not apply to "mixed" systems. Therefore a skilled artisan would derive from such teaching that a biaxially oriented polypropylene film is not useful for labelling a HDPE container. Following the teaching of Katsura *et al.* the skilled artisan would rather choose **similar** materials for the label and the container, which means a polyethylene film for a HDPE container. At best an alternative might be a propylene copolymer having a similarly low melting point. Such combinations are clearly suggested in Table 1 and by the examples. According to most of these examples only similar materials of container and labels are used, e.g., samples 2 to 6 on a ethylene-propylene copolymer container, sample 8 (a PET film) on a PET container, sample 11 (HDPE film) on a HDPE container and so forth.

Accordingly, taking the teaching of Kasutra *et al.* as a whole a skilled artisan cannot derive thereof that a biaxially oriented propylene homopolymer film can be useful for labelling a HDPE container in a blow molding process. Propylene homopolymer films do not meet the criteria given by Kasutra *et al.*, namely that the film shall have a shrinkage of more than 5% at 40°C below the melting of 132°C of HDPE. Moreover there is no indication that the shrink properties at "higher" temperature would be found to provide a helpful criteria to adapt the "right" shrink properties. Such criticality cannot also not be derived. Nowhere in Kasutra *et al.* is it suggested that a biaxially oriented propylene homopolymer film be used as a label material. There is no disclosure of any type in that reference which suggests the use of a propylene homopolymer film having more than 4% shrinkage at 130°C for use on an HDPE container. To make such a finding is clear hindsight based upon the teachings of the present invention. Applicant respectfully submits that Katsura *et al.* teach away from the claimed combination of an HDPE container and a propylene homopolymer film label as presently claimed, since the skilled artisan could not follow the rules defined by Katsura *et al.* to develop such a combination.

Reconsideration and withdrawal of the Examiner's rejection of independent Claim 13 under 35 U.S.C. Section 102(b) as being anticipated by Katsura *et al.* is respectfully requested. Insofar as the remaining dependent claims also rejected under 35 U.S.C. Section 102(b) as being anticipated by Katsura *et al.* only further limit the scope of independent Claim 13, Applicant respectfully submits that these claims are allowable over the art of record as well.

## **2. Rejections under *Leatherman et al.***

With respect to Paragraph 7 of the Office Action, the Examiner rejected Claims 1 through 10 and 12 through 20 as being anticipated by U.S. Patent No. 4,892,779 to *Leatherman et al.* (hereinafter referred to as "*Leatherman et al.*"). Of the rejected claims the only remaining independent claim is Claim 13, Claims 1 and 14 having been cancelled.

Applicant respectfully traverses this rejection.

Of the rejected claims certain claims have been cancelled. Particularly Claims 1, 6, 7, 10, 11, 14, 18 and 19 have been cancelled.

Applicant respectfully submits that the reference to *Leatherman et al.* is distinguishable from the present invention as claimed insofar as the label of the present invention is a non-porous film structure as claimed in amended independent Claim 13. *Leatherman et al.* fail to teach or in any way suggest such a construction.

Reconsideration and withdrawal of the Examiner's rejection of independent Claim 13 under 35 U.S.C. Section 102(b) as being anticipated by *Leatherman et al.* is respectfully requested. Insofar as the remaining dependent claims also rejected under 35 U.S.C. Section 102(b) as being anticipated by *Leatherman et al.* only further limit the scope of independent Claim 13, Applicant respectfully submits that these claims are allowable over the art of record as well.

**C. Claim Rejections - 35 U.S.C. Section 103(a)**

**1. Rejection of Claim 3**

With respect to Paragraph 8 of the Office Action, the Examiner rejected Claim 3 as being unpatentable over Katsura *et al.* under 35 U.S.C. Section 103(a).

Insofar as Claim 3 is dependent upon independent Claim 13 which Applicant regards as being patentable over the prior art, Applicant respectfully submits that this claim is allowable over the art of record as well.

Reconsideration and withdrawal of the rejection of Claim 3 under 35 U.S.C. Section 103(a) is respectfully requested.

**2. Rejection of Claims 8, 10, 12 and 20**

With respect to Paragraph 9 of the Office Action, the Examiner rejected Claims 8, 10, 12 and 20 as being unpatentable over Katsura *et al.* in view of Takagi under 35 U.S.C. Section 103(a).

Insofar as Claims 8, 10, 12 and 20 are dependent upon independent Claim 13 which Applicant regards as being patentable over the prior art, Applicant respectfully submits that this claim is allowable over the art of record as well.

Reconsideration and withdrawal of the rejection of Claims 8, 10, 12 and 20 under 35 U.S.C. Section 103(a) is respectfully requested.



**CONCLUSION**

In light of the above amendments and remarks, Applicant respectfully submits that all pending Claims 2 through 5, 8, 9, 12, 13, 15, 16, 17 and 20 as currently presented are in condition for allowance. If, for any reason, the Examiner disagrees, please call the undersigned attorney at 248-433-7552 in an effort to resolve any matter still outstanding *before* issuing another action. The undersigned attorney is confident that any issue which might remain can readily be worked out by telephone.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



Thomas T. Moga  
Registration No. 34,881  
Attorney for Applicant

DICKINSON WRIGHT PLLC  
1901 L Street, N.W., Suite 800  
Washington, D.C. 20036  
202-457-0160

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